

the habit of the species is quite different. It may be an instance where the anatomical structure combined with the external is necessary in order to ascertain the true systematic position of these species. For this purpose I informed Mr. Christensen, the author of *Index Filicum*, about the presence of these hairs in the species mentioned above, and he kindly wrote me that this singular structure was a new proof of a probable generic distinction between *D. marginalis*, *D. Filix-mas*, *D. cristata*, and *D. spinulosa* on the one side, and *D. noveboracensis* and *D. Thelypteris* on the other.

The fact that Schmidel established the genus *Thelypteris* a year earlier than *Dryopteris* of Adanson has resulted in the transfer of all these species, including those of *Phegopteris* (Presl) Fée, to *Thelypteris*, thus involving no small amount of nomenclatorial change. To those who are familiar with these plants as they grow in nature, such classification does not appeal as being in any way natural. It may be true that rules of nomenclature are of no use unless conscientiously followed, but it is sad to think of how much time is given and in recent years has been given to hunting for old names instead of studying the plants themselves. I feel absolutely confident that an extended study of the anatomy of these ferns will reveal many facts, which will prove helpful from the taxonomic point of view.

And no critical investigator will feel obliged to submit to such rules of nomenclature, so long as they only involve endless confusion and add nothing whatever to the natural history of plants.

CLINTON, MARYLAND.

A FLORA OF THE PENOBSCOT BAY REGION.—Since the publication in 1894 of Rand & Redfield's *Flora of Mount Desert Island, Maine*, there has been great activity in the botanical exploration of the Maine coast and numerous papers have resulted therefrom, but now comes a study of more detailed character, by Mr. Albert Frederick Hill, who has spent many summers in the area. *The Vascular Flora of the Eastern Penobscot Bay Region, Maine*,¹ is a detailed enumeration and a phytogeographic consideration of the vascular flora of the region immediately to the west of Mount Desert Island.

¹ A. F. Hill, Proc. Portland Soc. Nat. Hist. iii. pt. 2, pp. 199-304, with cuts and map. \$1.50. 1919.

The paper opens with an account of the general geographic and physical features, followed by a well prepared catalogue of the flora of the mainland township of Brooklin and the adjacent insular townships of Deer Isle, Stonington, Swans Island and Isle au Haut. The region is one of great topographic charm but composed for the most part of acid rock and consequently with a meagre flora—a total of only 612 indigenous species, varieties and named forms, besides the usual introductions. On this account it is to be regretted that Mr. Hill so closely circumscribed his area, for by including the western side of Penobscot Bay with its more varied and often calcareous soils—Islesboro, Camden, Rockland, etc.—he would have added to his flora hundreds of species such as *Deschampsia caespitosa*, *Agropyron tenerum*, *Scirpus occidentalis*, *Carex aurea*, *Anemone canadensis*, *Vitis novae-angliae*, *Dirca palustris*, *Viola rotundifolia*, *Galium labradoricum* and *Erigeron pulchellus*, calcicolous or at least scarcely calcifuge plants which would have furnished a striking contrast to the group of acid-rock species which compose so much of the flora on the east side of Penobscot Bay.

In the compilation of his catalogue the author has shown great industry, and alertness to make his records complete and to bring them into accord with the latest critical studies. Aside from its great value as a local flora, therefore, the paper is a convenient compendium of references to recent monographic studies of such plants as reach Mr. Hill's area. In the main the work is carefully done, only a few minor points impressing one as inaccurate. For instance, *Lycopodium clavatum*, var. *megastachyon* is var. *monostachyon* of the *Manual* but not of Greville & Hooker, the latter plant being more boreal than ours. Similarly, *Potentilla pacifica* is not *P. Anserina* L., as the synonymy would indicate, but a distinct plant formerly included under *P. Anserina*.

The last part of the paper, "Phytogeographical Aspects of the Flora," is, most unfortunately, not of the high grade of the catalogue. The author has allowed himself to become fascinated by the alluring categories provided by Merriam's life zones and has felt obliged to thrust almost every species of his flora into a single restricted geographic pigeon-hole. The result is what might be expected, for any botanist of not too limited experience either in the field or the herbarium soon learns that "it can't be done." The majority of plants are not simply "Hudsonian," "Canadian," "Alleghanian," "Carolinian," etc.¹ Most of them occur in two or more of these

¹ Merriam's zones were defined chiefly by the characteristic animals: the HUDSONIAN, "the northern part of the great trans-continental forest . . . stretching from Labrador to Alaska. . . . In the north inhabited by the wolverine, woodland caribou, moose [probably better "Canadian"—see Scharff, *Distrib. and Origin of Life in Am.* fig. 3]. . . . In the eastern United States . . . restricted to the cold summits of the highest mountains"; the CANADIAN, "the southern part of the great trans-continental coniferous forest of Canada, the northern parts of

so-called zones, and anyone who has carefully mapped the detailed ranges of hundreds of species knows that no two maps are alike. In fact it is difficult from Merriam's definition to determine where the Carolinian begins for no two of the trees he indicates as indices have coincident northern limits. It is natural to attempt to sort the species into groups of similar range, but we are inclined to make our groups altogether too limited in number. As Colonel Harvey so aptly says of the sociologists' attempts to classify all human beings into a few categories, "There is no especial harm and there is much mental exercise to be obtained from reducing all mortality to these few theoretical types—no especial harm, that is, supposing that one bears ever in mind what a constant whopper is involved in the reduction of any individual to a type."¹

Unfortunately, however, in the *Flora* before us the author seems not to have obtained "much mental exercise" in reducing all his plants to restricted geographic groups. At least it would be astonishing to a resident of Maryland or of Missouri, where *Galium triflorum* is common in woods, to find it classed unreservedly as a "Hudsonian" plant,—the more so since in the eastern part of the American continent we do not know it north of the southernmost border of Canadian Labrador. Similarly, *Dryopteris spinulosa*, *Deschampsia flexuosa*, *Festuca rubra*, *Arenaria lateriflora* and numerous others classed by the author as "Hudsonian" are surely common throughout most of southern New England and often much farther south, and most of them do not characterize Hudsonian areas. The same lack of very clear visualization of actual ranges of plants which is responsible for the above classifications is too apparent in succeeding lists: *Polygonum sagittatum*, *Ilex verticillata* and *Cornus alternifolia*, which extend from Florida, Alabama or Texas to southern Newfoundland and southernmost Canada, classed as "Canadian"; *Carex novae-angliae*, which occurs from Newfoundland to the mountains of New York and northern Pennsylvania [a splendid example of Canadian range], called "Alleghanian"; and *Juncus Greenei*, which covers the mountains of western Maine and northern New Hampshire (up to

Maine, New Hampshire, and Michigan. . . . In the East it covers the Green Mountains, Adirondacks and Catskills, and the higher mountains" to western North Carolina and eastern Tennessee. "Among . . . characteristic mammals and birds . . . lynx, marten, porcupine, . . . spruce and dusky grouse, cross-bills and Canada jays"; the ALLEGHANIAN, "the greater part of New England, southeastern Ontario, New York, Pennsylvania . . . and the Alleghanies . . . to Georgia," characterized by "chestnut, walnut, oaks, and hickories"; the CAROLINIAN, occupying "the larger part of the Middle States, except the mountains . . . on the Atlantic coast it reaches from near the mouth of Chesapeake Bay to southern Connecticut, and sends narrow arms up the valleys. . . . Counting from the north, the Carolinian area is that in which the sassafras, tulip tree, hackberry, sycamore, sweet gum, rose magnolia, red bud, persimmon and short-leaf pine first make their appearance."

¹ Harvey's Weekly, ii. no. 47, pp. 12, 13 (Nov. 22, 1919).

3800 feet) and reaches its southern limit as a very rare plant in north-central New Jersey, classed as "Carolinian." But the most startling example of Hill's conception of a "Carolinian" plant is *Aster nemoralis*, an unusually distinct species which occurs from the bogs and mountains of Newfoundland to Hudson Bay and northeastern Massachusetts and southward very locally in cold bogs to the pine barrens of New Jersey. Yet, in spite of this well known distribution, the author presents a map purporting to show the "Carolinian" range of the plant.

Just why *Aster nemoralis* has been singled out for vague and unsupported generalizations by recent phytogeographers, who have not taken the slight trouble to look up either the large herbaria at hand or the equally accessible literature, it is difficult to say, unless, perhaps, it is the unusual color (for an Aster) of its pink rays. In his *Flora of the Vicinity of New York* in 1915, Taylor laid great emphasis¹ upon the supposed absence of *A. nemoralis* from the area between New Jersey and Newfoundland (a range indicated in Fig. 1), from which fictitious data he drew far-reaching conclusions; but, as the present reviewer² pointed out at that time, he had quite ignored



Figs. 1-3. *ASTER NEMORALIS* Ait.

Range, fig. 1, as defined by Taylor; fig. 2, as published by Hill; fig. 3, as shown by the Gray Herbarium and standard local floras.

the abundant literature and the scores of herbarium-specimens which showed *A. nemoralis* to grow in every province and state (except Connecticut) between Newfoundland and New Jersey! The author of the *Flora* now under discussion has certainly read the latter review; nevertheless, he now publishes a map which is as misleading as was the imaginary statement of range above referred to. Hill gracefully acknowledges the placing at his disposal of the facilities of the Gray Herbarium, but a brief five minutes spent in looking up the material of *Aster nemoralis* in that collection would have shown it from the Natashquan River, entering the Gulf of St. Lawrence from the Lab-

¹ Taylor, Mem. N. Y. Bot. Gard. v. 24 (1915).

² Fernald, RHODORA, xvii. 68 (1915).

rador Peninsula; from Rupert River, entering Hudson Bay also from the Labrador Peninsula; from the shores of Georgian Bay and elsewhere in Ontario and northern Quebec; while reference merely to Macoun's *Catalogue* would have revealed other stations in the North: Lake Mistassini, Muskoka, etc.

This is not a matter of opinion nor a difference of interpretation. It is a statement of the quickly accessible facts which the author failed to get at. But why, without making sure to look up the most available sources of information, place before the always receptive botanical public such a map as is here reproduced in Fig. 2 (Hill's map), when it would have been almost as simple to prepare an approximately correct one, as indicated in Fig. 3? The author of Fig. 2 has colored solidly all of eastern New Brunswick, as well as all of southeastern Massachusetts (including Nantucket) and all southern Connecticut; but neither Fowler nor Macoun list *Aster nemoralis* in New Brunswick from northeast of the extreme southwest corner of the province; the reviewer, who has extensively explored in both eastern New Brunswick and in southeastern Massachusetts, knows of no evidence of the Aster in either area; and Bicknell, who certainly knows Nantucket, does not record the species from there. Neither is it mentioned in the Connecticut Botanical Society's *Catalogue of the Flowering Plants and Ferns of Connecticut*. In fact, the only authentic record from Connecticut seems to be that of a single station in Thompson,¹ the northeasternmost town of the state.

Other maps published by Hill display the same failure to check the immediately accessible data and show the ease with which supposed ranges can be mapped by those who do not realize that errors once born never die but, on the contrary, by others not situated to know the facts are continually mistaken for the truth and consequently perpetuated. For instance, the map said to show the distribution of *Viburnum dentatum* has the solid black extending nearly across Minnesota and Tennessee; but the really alert botanists of Michigan, Minnesota or Tennessee, should they see Hill's map, may well wonder where he got his data. The herbaria examined by him do not supply them, and it is significant that Beal, who has published the standard flora of Michigan, did not know of *V. dentatum* in the state, that Gattinger did not know it in Tennessee, and that, in their *Minnesota Trees and Shrubs*, Clements, Rosendahl & Butters do not mention it.

The reviewer regrets having to write so discouragingly of a piece of work which he would like wholly to commend. The first parts are decidedly praiseworthy but, although having some excellent points, like the discrimination of a comparatively rich flora overlying the small basic area of the region, the last part unfortunately contains so many assumptions that it must be classed as another addition to

¹ Weatherby, RHODORA, xxi. 75 (1919).

our too extensive mass of publications in which the tremendously interesting facts of distribution are replaced by vague and unsupported statements. That so many authors dealing with phytogeography are content to draw their deductions from inaccurate data is amazing, for, in this subject as in all others, as Byron long ago asserted, "truth is always strange,—stranger than fiction."—M. L. FERNALD.

DR. FRANK SHIPLEY COLLINS, one of the original members of the NEW ENGLAND BOTANICAL CLUB, for three years its president, and for more than twenty-one years a faithful, effective, and highly valued member of the Editorial Staff of RHODORA, died suddenly on May 25th at New Haven, Connecticut in his seventy-third year. A biographical sketch and an account of his botanical activities will appear in an early issue of this Journal.

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